

# SEQUENCE LISTING

<110> Patience, Clive

<120> Gamma Herpes Virus DNA and Methods of Use

<130> 61750-379

<150> US/09/612,204

<151> 2000-07-07

<150> US/60/142,736

<151> 1999-07-08

<150> US/60/168,532

<151> 1999-12-02

<160> 55

<170> PatentIn version 3.0

<210> 1

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<212> DNA

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<223> Fragment from Swine Gamma Herpesvirus DNA coding for glycoprotein B envelope protein

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gaaacatgtc aggaaaacac tgagtattac tttcaggcaa agacagacat gtacattttac      420
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<223> Deduced amino acid sequence of porcine gamma herpesvirus gpB gene

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Thr Ser Pro Pro Asn Thr Ala Thr Trp Ser Thr Glu Ser Pro Leu Thr  
 35 40 45

Gly His Tyr Gly Thr His Asp Ser Ser His Gly Glu Arg Gly Asn Asn  
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Glu Asn Arg Asp Ser Glu Glu Gln Asn Lys Asn Ile Tyr Gly Ser Pro  
 65 70 75 80

Ser Thr Phe Pro Tyr Arg Val Cys Ser Ala Ser Gly Val Gly Asp Val  
 85 90 95

Phe Arg Phe Gln Thr Asp His Val Cys Pro Asp Ala Ser Asp Met Val  
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His Ser Glu Gly Ile Leu Leu Ile Tyr Lys Gln Asn Ile Ile Pro Phe  
 115 120 125

Met Phe Arg Val Arg Lys Tyr Arg Lys Val Val Thr Thr Ser Thr Val  
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Tyr Asn Gly Ile Tyr Ser Asp Ser Ile Thr Asn Gln His Thr Phe Tyr  
 145 150 155 160

Lys Ser Ile Glu Pro Trp Glu Thr Glu Lys Met Asp Thr Ile Tyr Gln  
 165 170 175

Cys Phe Asn Ser Leu Arg Leu Asn Thr Gly Gly Asn Leu Leu Thr Tyr  
 180 185 190

Val Asp Arg Asp Asp Ile Asn Met Thr Val Phe Leu Gln Pro Val Asp  
 195 200 205

Gly Val Thr Pro Asp Val Lys Arg Tyr Gly Ser Gln Pro Glu Leu Tyr  
 210 215 220

Leu Glu Pro Gly Trp Phe Trp Gly Ser Tyr Arg Arg Arg Thr Thr Val  
 225 230 235 240

Asn Cys Glu Leu Met Asp Met Phe Ala Arg Ser Asn Pro Pro Phe Asp  
 245 250 255



Phe Phe Val Thr Ala Thr Gly Asp Thr Val Glu Met Ser Pro Phe Trp  
 260 265 270  
 Ser Gly Glu Asp Asp His Glu Asn Lys Met His Glu Lys Pro Trp Phe  
 275 280 285  
 Val Ser Val Ile Asn Asn Tyr Lys Val Val Asp Tyr Gln Asn Arg Gly  
 290 295 300  
 Thr Val Pro Leu Gly Lys Thr Arg Ile Phe Leu Asp Arg Glu Glu Tyr  
 305 310 315 320  
 Thr Leu Ser Trp Glu Lys His Leu Lys Asn Met Ser Tyr Cys Pro Leu  
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 Ser Tyr His Phe Val Ala Asn Asp Ile Thr Ala Ser Phe Thr Thr Ser  
 355 360 365  
 Lys Glu Asp Met Lys Glu Phe Asn Thr Thr Tyr His Cys Leu Asn Glu  
 370 375 380  
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 His Ser Lys Tyr Gly Asp Leu Lys Tyr Phe Lys Thr Asp Gly Gly Leu  
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 Glu Leu Ser Lys Ile Asn Pro Thr Ser Val Met Ser Met Ile Tyr Asn  
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 530 535 540  
 Cys Ile Val Val Asp Gln Thr Ser Val Ser Leu His Lys Ser Leu Arg  
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Leu  
865

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<220>  
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1989-2008

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 322-343  
  
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<210> 37  
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Val Cys Phe Cys Ala Gly Ala Ala His Ser Arg Gly Asp Thr Phe Gln  
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Thr Ser Ser Ser Pro Thr Pro Pro Gly Ser Ser Ser Lys Ala Pro Thr  
35 40 45

Lys Pro Gly Glu Glu Ala Ser Gly Pro Lys Ser Val Asp Phe Tyr Gln  
 50 55 60  
 Phe Arg Val Cys Ser Ala Ser Ile Thr Gly Glu Leu Phe Arg Phe Asn  
 65 70 75 80  
 Leu Glu Gln Thr Cys Pro Asp Thr Lys Asp Lys Tyr His Gln Glu Gly  
 85 90 95  
 Ile Leu Leu Val Tyr Lys Lys Asn Ile Val Pro His Ile Phe Lys Val  
 100 105 110  
 Arg Arg Tyr Arg Lys Ile Ala Thr Ser Val Thr Val Tyr Arg Gly Leu  
 115 120 125  
 Thr Glu Ser Ala Ile Thr Asn Lys Tyr Glu Leu Pro Arg Pro Val Pro  
 130 135 140  
 Leu Tyr Glu Ile Ser His Met Asp Ser Thr Tyr Gln Cys Phe Ser Ser  
 145 150 155 160  
 Met Lys Val Asn Val Asn Gly Val Glu Asn Thr Phe Thr Asp Arg Asp  
 165 170 175  
 Asp Val Asn Thr Thr Val Phe Leu Gln Pro Val Glu Gly Leu Thr Asp  
 180 185 190  
 Asn Ile Gln Arg Tyr Phe Ser Gln Pro Val Ile Tyr Ala Glu Pro Gly  
 195 200 205  
 Trp Phe Pro Gly Ile Tyr Arg Val Arg Thr Thr Val Asn Cys Glu Ile  
 210 215 220  
 Val Asp Met Ile Ala Arg Ser Ala Glu Pro Tyr Asn Tyr Phe Val Thr  
 225 230 235 240  
 Ser Leu Gly Asp Thr Val Glu Val Ser Pro Phe Cys Tyr Asn Glu Ser  
 245 250 255  
 Ser Cys Ser Thr Thr Pro Ser Asn Lys Asn Gly Leu Ser Val Gln Val  
 260 265 270  
 Val Leu Asn His Thr Val Val Thr Tyr Ser Asp Arg Gly Thr Ser Pro  
 275 280 285  
 Thr Pro Gln Asn Arg Ile Phe Val Glu Thr Gly Ala Tyr Thr Leu Ser  
 290 295 300  
 Trp Ala Ser Glu Ser Lys Thr Thr Ala Val Cys Pro Leu Ala Leu Trp  
 305 310 315 320  
 Lys Thr Phe Pro Arg Ser Ile Gln Thr Thr His Glu Asp Ser Phe His  
 325 330 335  
 Phe Val Ala Asn Glu Ile Thr Ala Thr Phe Thr Ala Pro Leu Thr Pro  
 340 345 350

Val	Ala	Asn	Phe	Thr	Asp	Thr	Tyr	Ser	Cys	Leu	Thr	Ser	Asp	Ile	Asn		
		355					360					365					
Thr	Thr	Leu	Asn	Ala	Ser	Lys	Ala	Lys	Leu	Ala	Ser	Thr	His	Val	Pro		
		370				375					380						
Asn	Gly	Thr	Val	Gln	Tyr	Phe	His	Thr	Thr	Gly	Gly	Leu	Tyr	Leu	Val		
385					390					395					400		
Trp	Gln	Pro	Met	Ser	Ala	Ile	Asn	Leu	Thr	His	Ala	Gln	Gly	Asp	Ser		
				405					410					415			
Gly	Asn	Pro	Thr	Ser	Ser	Pro	Pro	Pro	Ser	Ala	Ser	Pro	Met	Thr	Thr		
			420					425					430				
Ser	Ala	Ser	Arg	Arg	Lys	Arg	Arg	Ser	Ala	Ser	Thr	Ala	Ala	Ala	Gly		
		435					440					445					
Gly	Gly	Gly	Ser	Thr	Asp	Asn	Leu	Ser	Tyr	Thr	Gln	Leu	Gln	Phe	Ala		
	450					455					460						
Tyr	Asp	Lys	Leu	Arg	Asp	Gly	Ile	Asn	Gln	Val	Leu	Glu	Glu	Leu	Ser		
465					470					475					480		
Arg	Ala	Trp	Cys	Arg	Glu	Gln	Val	Arg	Asp	Asn	Leu	Met	Trp	Tyr	Glu		
				485					490					495			
Leu	Ser	Lys	Ile	Asn	Pro	Thr	Ser	Val	Met	Thr	Ala	Ile	Tyr	Gly	Arg		
			500					505					510				
Pro	Val	Ser	Ala	Lys	Phe	Val	Gly	Asp	Ala	Ile	Ser	Val	Thr	Glu	Cys		
		515					520					525					
Ile	Asn	Val	Asp	Gln	Ser	Ser	Val	Asn	Ile	His	Lys	Ser	Leu	Arg	Thr		
	530					535					540						
Asn	Ser	Lys	Asp	Val	Cys	Tyr	Ala	Arg	Pro	Leu	Val	Thr	Phe	Lys	Phe		
545					550					555					560		
Leu	Asn	Ser	Ser	Asn	Leu	Phe	Thr	Gly	Gln	Leu	Gly	Ala	Arg	Asn	Glu		
				565					570					575			
Ile	Ile	Leu	Thr	Asn	Asn	Gln	Val	Glu	Thr	Cys	Lys	Asp	Thr	Cys	Glu		
			580					585					590				
His	Tyr	Phe	Ile	Thr	Arg	Asn	Glu	Thr	Leu	Val	Tyr	Lys	Asp	Tyr	Ala		
		595					600					605					
Tyr	Leu	Arg	Thr	Ile	Asn	Thr	Thr	Asp	Ile	Ser	Thr	Leu	Asn	Thr	Phe		
	610					615					620						
Ile	Ala	Leu	Asn	Leu	Ser	Phe	Ile	Gln	Asn	Ile	Asp	Phe	Lys	Ala	Ile		
625					630					635					640		
Glu	Leu	Tyr	Ser	Ser	Ala	Glu	Lys	Arg	Leu	Ala	Ser	Ser	Val	Phe	Asp		
				645					650					655			

Leu Glu Thr Met Phe Arg Glu Tyr Asn Tyr Tyr Thr His Arg Leu Ala  
 660 665 670  
 Gly Leu Arg Glu Asp Leu Asp Asn Thr Ile Asp Met Asn Lys Glu Arg  
 675 680 685  
 Phe Val Arg Asp Leu Ser Glu Ile Val Ala Asp Leu Gly Gly Ile Gly  
 690 695 700  
 Lys Thr Val Val Asn Val Ala Ser Ser Val Val Thr Leu Cys Gly Ser  
 705 710 715 720  
 Leu Val Thr Gly Phe Ile Asn Phe Ile Lys His Pro Leu Gly Gly Met  
 725 730 735  
 Leu Met Ile Ile Ile Val Ile Ala Ile Ile Leu Ile Ile Phe Met Leu  
 740 745 750  
 Ser Arg Arg Thr Asn Thr Ile Ala Gln Ala Pro Val Lys Met Ile Tyr  
 755 760 765  
 Pro Asp Val Asp Arg Arg Ala Pro Pro Ser Gly Gly Ala Pro Thr Arg  
 770 775 780  
 Glu Glu Ile Lys Asn Ile Leu Leu Gly Met His Gln Leu Gln Gln Glu  
 785 790 795 800  
 Arg Gln Lys Ala Asp Asp Leu Lys Lys Ser Thr Pro Ser Val Phe Gln  
 805 810 815  
 Arg Thr Ala Asn Gly Leu Arg  
 820  
 <210> 38  
 <211> 808  
 <212> PRT  
 <213> Rhesus monkey rhadinovirus  
 <400> 38  
 Met Met Ile Thr Asn Arg Thr Arg Arg Leu Leu Arg Ala Trp Val Val  
 1 5 10 15  
 Ile Ile Ala Ile Gly Thr Ala Val Gly Glu Asn Val Thr Thr Pro Lys  
 20 25 30  
 Gly Ala Thr Thr Thr Ala Lys Pro Thr Pro Gly Pro Ser Thr Pro Thr  
 35 40 45  
 Pro Pro Glu Asn Pro Pro Arg Ala Glu Ala Phe Lys Phe Arg Val Cys  
 50 55 60  
 Ser Ala Ser Ala Thr Gly Glu Leu Phe Arg Phe Asn Leu Glu Lys Thr  
 65 70 75 80  
 Cys Pro Gly Thr Glu Asp Lys Thr His Gln Glu Gly Ile Leu Met Val  
 85 90 95



Phe	Lys	Lys	Asn	Ile	Val	Pro	His	Ile	Phe	Lys	Val	Arg	Arg	Tyr	Arg		
			100					105						110			
Lys	Val	Ala	Thr	Ser	Val	Thr	Val	Tyr	Arg	Gly	Trp	Thr	Glu	Thr	Ala		
		115					120					125					
Val	Thr	Gly	Lys	Gln	Glu	Val	Ile	Arg	Pro	Val	Pro	Gln	Tyr	Glu	Ile		
	130					135					140						
Asn	His	Met	Asp	Thr	Thr	Tyr	Gln	Cys	Phe	Ser	Ser	Met	Arg	Val	Asn		
145					150					155					160		
Val	Asn	Gly	Ile	Val	Asn	Thr	Tyr	Thr	Asp	Arg	Asp	Phe	Thr	Asn	Gln		
				165					170					175			
Thr	Val	Phe	Leu	Gln	Pro	Val	Glu	Gly	Leu	Thr	Asp	Asn	Ile	Gln	Arg		
		180						185					190				
Tyr	Phe	Ser	Gln	Pro	Val	Leu	Tyr	Thr	Thr	Pro	Gly	Trp	Phe	Pro	Gly		
		195					200					205					
Ile	Tyr	Arg	Val	Arg	Thr	Thr	Val	Asn	Cys	Glu	Ile	Val	Asp	Met	Ile		
	210					215					220						
Ala	Arg	Ser	Ala	Glu	Pro	Tyr	Ser	Tyr	Phe	Val	Thr	Ala	Leu	Gly	Asp		
225					230					235					240		
Thr	Val	Glu	Val	Ser	Pro	Phe	Cys	His	Asn	Asp	Ser	Thr	Cys	Ser	Val		
				245					250					255			
Ala	Glu	Lys	Thr	Glu	Asn	Gly	Leu	Gly	Ala	Arg	Val	Leu	Thr	Asn	Tyr		
			260					265					270				
Thr	Met	Val	Asp	Phe	Ala	Thr	Arg	Ala	Pro	Thr	Thr	Glu	Thr	Arg	Val		
	275						280					285					
Phe	Ala	Asp	Ser	Gly	Glu	Tyr	Thr	Val	Ser	Trp	Lys	Ala	Glu	Asp	Pro		
	290					295					300						
Lys	Ser	Ala	Val	Cys	Ala	Leu	Thr	Leu	Trp	Lys	Thr	Phe	Pro	Arg	Ala		
305					310					315					320		
Ile	Gln	Thr	Thr	His	Glu	Ala	Ser	Tyr	His	Phe	Val	Ala	Asn	Asp	Val		
				325					330					335			
Thr	Ala	Thr	Phe	Thr	Ser	Pro	Leu	Ser	Glu	Val	Ala	Asn	Phe	Thr	Gly		
		340						345					350				
Thr	Tyr	Ser	Cys	Leu	Asp	Glu	Val	Ile	Gln	Lys	Thr	Leu	Asn	Asp	Thr		
		355					360					365					
Ile	Lys	Lys	Leu	Ser	Asp	Thr	His	Val	Thr	Asn	Gly	Ser	Ala	Gln	Tyr		
	370					375					380						
Tyr	Lys	Thr	Glu	Gly	Gly	Leu	Phe	Leu	Leu	Trp	Gln	Pro	Leu	Thr	Pro		
385					390					395					400		

Leu Ser Leu Val Asp Glu Met Arg Gly Leu Asn Gly Thr Thr Pro Ala  
 405 410 415  
 Pro Pro Ala Thr Thr Ser Thr Val Ser Arg Val Arg Arg Ser Val Asn  
 420 425 430  
 Thr Asn Glu Gln Ala Thr Asp Asn Leu Ala Ala Pro Gln Leu Gln Phe  
 435 440 445  
 Ala Tyr Asp Lys Leu Arg Ala Ser Ile Asn Lys Val Leu Glu Glu Leu  
 450 455 460  
 Ser Arg Ala Trp Cys Arg Glu Gln Val Arg Asp Thr Tyr Met Trp Tyr  
 465 470 475 480  
 Glu Leu Ser Lys Ile Asn Pro Thr Ser Val Met Thr Ala Ile Tyr Gly  
 485 490 495  
 Arg Pro Val Ser Ala Lys Phe Val Gly Asp Ala Ile Ser Val Thr Asp  
 500 505 510  
 Cys Val Ala Val Asp Gln Ala Ser Val Ser Ile His Lys Ser Leu Arg  
 515 520 525  
 Thr Ser Thr Pro Gly Met Cys Tyr Ser Arg Pro Pro Val Thr Phe Arg  
 530 535 540  
 Phe Leu Asn Ser Thr Thr Leu Phe Lys Gly Gln Leu Gly Pro Arg Asn  
 545 550 555 560  
 Glu Ile Ile Leu Thr Asp Asn Gln Val Glu Ala Cys Lys Glu Thr Cys  
 565 570 575  
 Glu His Tyr Phe Ile Ala Ser Asn Val Thr Tyr Tyr Tyr Lys Asp Tyr  
 580 585 590  
 Val Phe Val Lys Lys Ile Asn Thr Ser Glu Ile Ser Thr Leu Gly Thr  
 595 600 605  
 Phe Ile Ala Leu Asn Leu Ser Phe Ile Glu Asn Ile Asp Phe Arg Val  
 610 615 620  
 Ile Glu Leu Tyr Ser Arg Ala Glu Lys Lys Leu Ser Gly Ser Val Phe  
 625 630 635 640  
 Asp Ile Glu Thr Met Phe Arg Glu Tyr Asn Tyr Tyr Thr Gln Arg Leu  
 645 650 655  
 Ala Gly Leu Arg Glu Asp Leu Asp Asn Thr Ile Asp Leu Asn Arg Asp  
 660 665 670  
 Arg Leu Ala Arg Asp Leu Ser Glu Ile Val Ala Asp Leu Gly Asp Val  
 675 680 685  
 Gly Arg Thr Val Val Asn Val Ala Ser Ser Val Ile Thr Leu Phe Gly  
 690 695 700

Ser Ile Val Ser Gly Phe Ile Asn Phe Ile Lys Ser Pro Phe Gly Gly  
 705 710 715 720  
 Met Leu Met Ile Leu Val Ile Val Ala Val Val Leu Ile Val Phe Ala  
 725 730 735  
 Leu Asn Arg Arg Thr Asn Ala Ile Ala Gln Ala Pro Ile Arg Met Ile  
 740 745 750  
 Tyr Pro Asp Ile Asp Lys Met Gln Pro Ser Gly Gly Lys Val Asp Gln  
 755 760 765  
 Glu Gln Ile Lys Asn Ile Leu Ala Gly Met His Gln Leu Gln Gln Glu  
 770 775 780  
 Glu Arg Arg Arg Leu Asp Glu Gln Gln Arg Ser Ala Pro Ser Leu Phe  
 785 790 795 800  
 Arg Arg Ala Ser Asp Gly Leu Lys  
 805

<210> 39  
 <211> 831  
 <212> PRT  
 <213> Murine herpesvirus 68

<400> 39  
 Met Tyr Pro Thr Val Lys Ser Met Arg Val Ala His Leu Thr Asn Leu  
 1 5 10 15  
 Leu Thr Leu Leu Cys Leu Leu Cys His Thr His Leu Tyr Val Cys Gln  
 20 25 30  
 Pro Thr Thr Leu Arg Gln Pro Ser Asp Met Thr Pro Ala Gln Asp Ala  
 35 40 45  
 Pro Thr Glu Thr Pro Pro Pro Leu Ser Thr Asn Thr Asn Arg Gly Phe  
 50 55 60  
 Glu Tyr Phe Arg Val Cys Gly Val Ala Ala Thr Gly Glu Thr Phe Arg  
 65 70 75 80  
 Phe Asp Leu Asp Lys Thr Cys Pro Ser Thr Gln Asp Lys Lys His Val  
 85 90 95  
 Glu Gly Ile Leu Leu Val Tyr Lys Ile Asn Ile Val Pro Tyr Ile Phe  
 100 105 110  
 Lys Ile Arg Arg Tyr Arg Lys Ile Ile Thr Gln Leu Thr Ile Trp Arg  
 115 120 125  
 Gly Leu Thr Thr Ser Ser Val Thr Gly Lys Phe Glu Met Ala Thr Gln  
 130 135 140  
 Ala His Glu Trp Glu Val Gly Asp Phe Asp Ser Ile Tyr Gln Cys Tyr  
 145 150 155 160

Asn	Ser	Ala	Thr	Met	Val	Val	Asn	Asn	Val	Arg	Gln	Val	Tyr	Val	Asp		
				165					170					175			
Arg	Asp	Gly	Val	Asn	Lys	Thr	Val	Asn	Ile	Arg	Pro	Val	Asp	Gly	Leu		
			180					185					190				
Thr	Gly	Asn	Ile	Gln	Arg	Tyr	Phe	Ser	Gln	Pro	Thr	Leu	Tyr	Ser	Glu		
		195					200					205					
Pro	Gly	Trp	Met	Pro	Gly	Phe	Tyr	Arg	Val	Arg	Thr	Thr	Val	Asn	Cys		
	210					215					220						
Glu	Ile	Val	Asp	Met	Val	Ala	Arg	Ser	Met	Asp	Pro	Tyr	Asn	Tyr	Ile		
225					230					235					240		
Ala	Thr	Ala	Leu	Gly	Asp	Ser	Leu	Glu	Leu	Ser	Pro	Phe	Gln	Thr	Phe		
				245					250					255			
Asp	Asn	Thr	Ser	Gln	Ser	Thr	Ala	Pro	Lys	Arg	Ala	Asp	Met	Arg	Val		
			260					265					270				
Arg	Glu	Val	Lys	Asn	Tyr	Lys	Phe	Val	Asp	Tyr	Asn	Asn	Arg	Gly	Thr		
		275					280					285					
Ala	Pro	Ala	Gly	Gln	Ser	Arg	Thr	Phe	Leu	Glu	Thr	Pro	Ser	Ala	Thr		
	290					295					300						
Tyr	Ser	Trp	Lys	Thr	Ala	Thr	Arg	Gln	Thr	Ala	Thr	Cys	Asp	Leu	Val		
305					310					315				320			
His	Trp	Lys	Thr	Phe	Pro	Arg	Ala	Ile	Gln	Thr	Ala	His	Glu	His	Ser		
				325					330				335				
Tyr	His	Phe	Val	Ala	Asn	Glu	Val	Thr	Ala	Thr	Phe	Asn	Thr	Pro	Leu		
		340						345				350					
Thr	Glu	Val	Glu	Asn	Phe	Thr	Ser	Thr	Tyr	Ser	Cys	Val	Ser	Asp	Gln		
		355					360					365					
Ile	Asn	Lys	Thr	Ile	Ser	Glu	Tyr	Ile	Gln	Lys	Leu	Asn	Asn	Ser	Tyr		
	370					375					380						
Val	Ala	Ser	Gly	Lys	Thr	Gln	Tyr	Phe	Lys	Thr	Asp	Gly	Asn	Leu	Tyr		
385					390					395				400			
Leu	Ile	Trp	Gln	Pro	Leu	Glu	His	Pro	Glu	Ile	Glu	Asp	Ile	Asp	Glu		
				405					410					415			
Asp	Ser	Asp	Pro	Glu	Pro	Thr	Pro	Ala	Pro	Pro	Lys	Ser	Thr	Arg	Arg		
			420					425					430				
Lys	Arg	Glu	Ala	Ala	Asp	Asn	Gly	Asn	Ser	Thr	Ser	Glu	Val	Ser	Lys		
		435					440					445					
Gly	Ser	Glu	Asn	Pro	Leu	Ile	Thr	Ala	Gln	Ile	Gln	Phe	Ala	Tyr	Asp		
	450					455					460						

Lys Leu Thr Thr Ser Val Asn Asn Val Leu Glu Glu Leu Ser Arg Ala  
 465 470 475 480  
 Trp Cys Arg Glu Gln Val Arg Asp Thr Leu Met Trp Tyr Glu Leu Ser  
 485 490 495  
 Lys Val Asn Pro Thr Ser Val Met Ser Ala Ile Tyr Gly Lys Pro Val  
 500 505 510  
 Ala Ala Arg Tyr Val Gly Asp Ala Ile Ser Val Thr Asp Cys Ile Tyr  
 515 520 525  
 Val Asp Gln Ser Ser Val Asn Ile His Gln Ser Leu Arg Leu Gln His  
 530 535 540  
 Asp Lys Thr Thr Cys Tyr Ser Arg Pro Arg Val Thr Phe Lys Phe Ile  
 545 550 555 560  
 Asn Ser Thr Asp Pro Leu Thr Gly Gln Leu Gly Pro Arg Lys Glu Ile  
 565 570 575  
 Ile Leu Ser Asn Thr Asn Ile Glu Thr Cys Lys Asp Glu Ser Glu His  
 580 585 590  
 Tyr Phe Ile Val Gly Glu Tyr Ile Tyr Tyr Tyr Lys Asn Tyr Ile Phe  
 595 600 605  
 Glu Glu Lys Leu Asn Leu Ser Ser Ile Ala Thr Leu Asp Thr Phe Ile  
 610 615 620  
 Ala Leu Asn Ile Ser Phe Ile Glu Asn Ile Asp Phe Lys Thr Val Glu  
 625 630 635 640  
 Leu Tyr Ser Ser Thr Glu Arg Lys Leu Ala Ser Ser Val Phe Asp Ile  
 645 650 655  
 Glu Ser Met Phe Arg Glu Tyr Asn Tyr Tyr Thr Tyr Ser Leu Ala Gly  
 660 665 670  
 Ile Lys Lys Asp Leu Asp Asn Thr Ile Asp Tyr Asn Arg Asp Arg Leu  
 675 680 685  
 Val Gln Asp Leu Ser Asp Met Met Ala Asp Leu Gly Asp Ile Gly Arg  
 690 695 700  
 Ser Val Val Asn Val Val Ser Ser Val Val Thr Phe Phe Ser Ser Ile  
 705 710 715 720  
 Val Thr Gly Phe Ile Lys Phe Phe Thr Asn Pro Leu Gly Gly Ile Phe  
 725 730 735  
 Ile Leu Leu Ile Ile Gly Gly Ile Ile Phe Leu Val Val Val Leu Asn  
 740 745 750  
 Arg Arg Asn Ser Gln Phe His Asp Ala Pro Ile Lys Met Leu Tyr Pro  
 755 760 765

Ser Val Glu Asn Tyr Ala Ala Arg Gln Ala Pro Pro Pro Tyr Ser Ala  
 770 775 780

Ser Pro Pro Ala Ile Asp Lys Glu Glu Ile Lys Arg Ile Leu Leu Gly  
 785 790 795 800

Met His Gln Val His Gln Glu Glu Lys Glu Ala Gln Lys Gln Leu Thr  
 805 810 815

Asn Ser Gly Pro Thr Leu Trp Gln Lys Ala Thr Gly Phe Leu Arg  
 820 825 830

<210> 40  
 <211> 844  
 <212> PRT  
 <213> Bovine herpesvirus 4

<400> 40  
 Tyr Tyr Lys Thr Ile Leu Phe Phe Ala Leu Ile Lys Val Cys Ser Phe  
 1 5 10 15

Asn Gln Thr Thr Thr His Ser Thr Thr Thr Ser Pro Ser Ile Ser Ser  
 20 25 30

Thr Thr Ser Ser Thr Thr Thr Ser Thr Ser Lys Pro Ser Asn Thr Thr  
 35 40 45

Ser Thr Asn Ser Ser Leu Ala Ala Ser Pro Gln Asn Thr Ser Thr Ser  
 50 55 60

Lys Pro Ser Thr Asp Asn Gln Gly Thr Ser Thr Pro Thr Ile Pro Thr  
 65 70 75 80

Val Thr Asp Asp Thr Ala Ser Lys Asn Phe Tyr Lys Tyr Arg Val Cys  
 85 90 95

Ser Ala Ser Ser Ser Ser Gly Glu Leu Phe Arg Phe Asp Leu Asp Gln  
 100 105 110

Thr Cys Pro Asp Thr Lys Asp Lys Lys His Val Glu Gly Ile Leu Leu  
 115 120 125

Val Leu Lys Lys Asn Ile Val Pro Tyr Ile Phe Lys Val Arg Lys Tyr  
 130 135 140

Arg Lys Ile Ala Thr Ser Val Thr Val Tyr Arg Gly Trp Ser Gln Ala  
 145 150 155 160

Ala Val Thr Asn Arg Asp Asp Ile Ser Arg Ala Ile Pro Tyr Asn Glu  
 165 170 175

Ile Ser Met Ile Asp Arg Thr Tyr His Cys Phe Ser Ala Met Ala Thr  
 180 185 190

Val Ile Asn Gly Ile Leu Asn Thr Tyr Ile Asp Arg Asp Ser Glu Asn  
 195 200 205

Lys Ser Val Pro Leu Gln Pro Val Ala Gly Leu Thr Glu Asn Ile Asn  
 210 215 220  
 Arg Tyr Phe Ser Gln Pro Leu Ile Tyr Ala Glu Pro Gly Trp Phe Pro  
 225 230 235 240  
 Gly Ile Tyr Arg Val Arg Thr Thr Val Asn Cys Glu Val Val Asp Met  
 245 250 255  
 Tyr Ala Arg Ser Val Glu Pro Tyr Thr His Phe Ile Thr Ala Leu Gly  
 260 265 270  
 Asp Thr Ile Glu Ile Ser Pro Phe Cys His Asn Asn Ser Gln Cys Thr  
 275 280 285  
 Thr Gly Asn Ser Thr Ser Arg Asp Ala Thr Lys Val Trp Ile Glu Glu  
 290 295 300  
 Asn His Gln Thr Val Asp Tyr Glu Arg Arg Gly His Pro Thr Lys Asp  
 305 310 315 320  
 Lys Arg Ile Phe Leu Lys Asp Glu Glu Tyr Thr Ile Ser Trp Lys Ala  
 325 330 335  
 Glu Asp Arg Glu Arg Ala Ile Cys Asp Phe Val Ile Trp Lys Thr Phe  
 340 345 350  
 Pro Arg Ala Ile Gln Thr Ile His Asn Glu Ser Phe His Phe Val Ala  
 355 360 365  
 Asn Glu Val Thr Ala Ser Phe Leu Thr Ser Asn Gln Glu Glu Thr Glu  
 370 375 380  
 Leu Arg Gly Asn Thr Glu Ile Leu Asn Cys Met Asn Ser Thr Ile Asn  
 385 390 395 400  
 Glu Thr Leu Glu Glu Thr Val Lys Lys Phe Asn Lys Ser His Ile Arg  
 405 410 415  
 Asp Gly Glu Val Lys Tyr Tyr Lys Thr Asn Gly Gly Leu Phe Leu Ile  
 420 425 430  
 Trp Gln Ala Met Lys Pro Leu Asn Leu Ser Glu His Thr Asn Tyr Thr  
 435 440 445  
 Ile Glu Arg Asn Asn Lys Thr Gly Asn Lys Ser Arg Gln Lys Arg Ser  
 450 455 460  
 Val Asp Thr Lys Thr Phe Gln Gly Ala Lys Gly Leu Ser Thr Ala Gln  
 465 470 475 480  
 Val Gln Tyr Ala Tyr Asp His Leu Arg Thr Ser Met Asn His Ile Leu  
 485 490 495  
 Glu Glu Leu Thr Lys Thr Trp Cys Arg Glu Gln Lys Lys Asp Asn Leu  
 500 505 510

Met	Trp	Tyr	Glu	Leu	Ser	Lys	Ile	Asn	Pro	Val	Ser	Val	Met	Ala	Ala		
			515					520				525					
Ile	Tyr	Gly	Lys	Pro	Val	Ala	Val	Lys	Ala	Met	Gly	Asp	Ala	Phe	Met		
		530				535					540						
Val	Ser	Glu	Cys	Ile	Asn	Val	Asp	Gln	Ala	Ser	Val	Asn	Ile	His	Lys		
545					550					555					560		
Ser	Met	Arg	Thr	Asp	Asp	Pro	Lys	Val	Cys	Tyr	Ser	Arg	Pro	Leu	Val		
				565					570					575			
Thr	Phe	Lys	Phe	Val	Asn	Ser	Thr	Ala	Thr	Phe	Arg	Gly	Gln	Leu	Gly		
			580					585					590				
Thr	Arg	Asn	Glu	Ile	Leu	Leu	Thr	Asn	Thr	His	Val	Glu	Thr	Cys	Arg		
		595					600					605					
Pro	Thr	Ala	Asp	His	Tyr	Phe	Phe	Val	Lys	Asn	Met	Thr	His	Tyr	Phe		
		610				615					620						
Lys	Asp	Tyr	Lys	Phe	Val	Lys	Thr	Met	Asp	Thr	Asn	Asn	Ile	Ser	Thr		
625					630					635					640		
Leu	Asp	Thr	Phe	Leu	Thr	Leu	Asn	Leu	Thr	Phe	Ile	Asp	Asn	Ile	Asp		
				645					650					655			
Phe	Lys	Thr	Val	Glu	Leu	Tyr	Ser	Glu	Thr	Glu	Arg	Lys	Met	Ala	Ser		
			660					665					670				
Ala	Leu	Asp	Leu	Glu	Thr	Met	Phe	Arg	Glu	Tyr	Asn	Tyr	Tyr	Thr	Gln		
		675					680					685					
Lys	Leu	Ala	Ser	Leu	Arg	Glu	Asp	Leu	Asp	Asn	Thr	Ile	Asp	Leu	Asn		
		690				695					700						
Arg	Asp	Arg	Leu	Val	Lys	Asp	Leu	Ser	Glu	Met	Met	Ala	Asp	Leu	Gly		
705					710					715					720		
Asp	Ile	Gly	Lys	Val	Val	Val	Asn	Thr	Phe	Ser	Gly	Ile	Val	Thr	Val		
				725					730					735			
Phe	Gly	Ser	Ile	Val	Gly	Gly	Phe	Val	Ser	Phe	Phe	Thr	Asn	Pro	Ile		
			740					745					750				
Gly	Gly	Val	Thr	Ile	Ile	Leu	Leu	Leu	Ile	Val	Val	Val	Phe	Val	Val		
		755					760					765					
Phe	Ile	Val	Ser	Arg	Arg	Thr	Asn	Asn	Met	Asn	Glu	Ala	Pro	Ile	Lys		
		770				775					780						
Met	Ile	Tyr	Pro	Asn	Ile	Asp	Lys	Ala	Ser	Glu	Gln	Glu	Asn	Ile	Gln		
785					790					795					800		
Pro	Leu	Pro	Gly	Glu	Glu	Ile	Lys	Arg	Ile	Leu	Leu	Gly	Met	His	Gln		
				805					810					815			



Leu Gln Gln Ser Glu His Gly Lys Ser Glu Glu Glu Ala Ser His Lys  
820 825 830

Pro Gly Leu Phe Gln Leu Leu Gly Asp Gly Leu Gln  
835 840

<210> 41

<211> 791

<212> PRT

<213> Ateline herpesvirus 3

<400> 41

Met Thr Leu Asn Arg Cys Val Leu Leu Ile Val Leu Thr Phe Ser Thr  
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Ala Cys Ser Gln Thr Thr Pro Ala Ser Ser Asp Glu Asn Gly Lys Thr  
20 25 30

Pro Ala Ile Glu Lys Glu Tyr Phe Lys Tyr Arg Val Cys Ser Ala Ser  
35 40 45

Thr Thr Gly Glu Leu Phe Arg Phe Asn Leu Asp Arg Ala Cys Pro Ser  
50 55 60

Thr Glu Asp Lys Val His Arg Glu Gly Ile Leu Leu Val Tyr Lys Lys  
65 70 75 80

Asn Ile Val Pro His Ile Phe Lys Val Arg Arg Tyr Lys Lys Ile Ala  
85 90 95

Thr Ser Val Arg Ile Phe Asn Gly Trp Ser Arg Glu Gly Val Ala Ile  
100 105 110

Thr Asn Lys Trp Glu Leu Ser Arg Ala Val Pro Lys Tyr Glu Ile Asn  
115 120 125

Leu Met Asp Lys Asn Tyr Gln Cys His Asn Cys Met Gln Ile Glu Val  
130 135 140

Asn Gly Leu Leu Asn Ser Tyr Cys Asp Arg Asp Gly Asn Asn Lys Thr  
145 150 155 160

Val Asp Leu Lys Pro Val Asp Gly Leu Thr Gly Ala Ile Thr Arg Tyr  
165 170 175

Val Ser Gln Pro Lys Ile Phe Ala Asp Ala Gly Trp Leu Trp Gly Thr  
180 185 190

Tyr Lys Thr Arg Thr Thr Val Asn Cys Glu Ile Val Glu Met Phe Ala  
195 200 205

Arg Ser Ala Asp Pro Tyr Thr Tyr Phe Val Thr Ala Leu Gly Asp Thr  
210 215 220

Val Glu Val Ser Pro Phe Cys Asp Ala Glu Asn Ser Cys Pro Asn Ala  
225 230 235 240

Ser Asp Val Leu Ser Ser Gln Val Asp Phe Asn His Thr Val Val Asp  
 245 250 255  
 Tyr Gly Asn Arg Ala Thr Ser Gln Gln His Gly Lys Arg Ile Phe Ala  
 260 265 270  
 His Thr Leu Asp Tyr Ser Val Ser Trp Glu Ala Ile Asn Lys Thr Thr  
 275 280 285  
 Ser Val Cys Ser Met Val Phe Trp Lys Gly Phe Gln Arg Ala Ile Gln  
 290 295 300  
 Thr Glu His Asp Ser Thr Tyr His Phe Ile Ala Asn Glu Ile Thr Ala  
 305 310 315 320  
 Gly Phe Ser Thr Ser Lys Glu Thr Leu Ala Ser Phe Ser Ser Glu Tyr  
 325 330 335  
 Ser Cys Leu Met Ser Asp Ile Asn Ser Thr Leu Thr Asp Lys Ile Gly  
 340 345 350  
 Arg Val Asn Asn Thr His Val Pro Asn Gly Thr Ala Gln Tyr Phe Lys  
 355 360 365  
 Thr Glu Gly Gly Met Ile Leu Val Trp Gln Pro Leu Thr Ala Ile Glu  
 370 375 380  
 Leu Glu Glu Ala Met Ile Glu Ala Thr Thr Val Ser Pro Thr Pro Leu  
 385 390 395 400  
 Ser Thr Ala His Leu Thr Ser Arg Arg Thr Gly Arg Arg Lys Arg Asp  
 405 410 415  
 Val Ser Ala Gly Ser Glu Asn Ser Val Leu Leu Ala Gln Ile Gln Tyr  
 420 425 430  
 Ala Tyr Asp Lys Leu Arg Gln Ser Ile Asn Asn Val Leu Glu Glu Leu  
 435 440 445  
 Ala Ile Thr Trp Cys Arg Glu Gln Val Arg Gln Thr Met Ile Trp Tyr  
 450 455 460  
 Glu Ile Ala Lys Ile Asn Pro Thr Ser Val Met Thr Ala Ile Tyr Gly  
 465 470 475 480  
 Lys Pro Val Ser Ala Lys Ala Leu Gly Asp Val Ile Ser Val Thr Glu  
 485 490 495  
 Cys Ile Asn Val Asp Gln Thr Ser Val Ser Ile His Lys Ser Leu Lys  
 500 505 510  
 Thr Thr Asn Asn Asp Val Cys Tyr Ser Arg Pro Pro Val Thr Phe Lys  
 515 520 525  
 Phe Val Asn Ser Ser Gln Leu Phe Lys Gly Gln Leu Gly Ala Arg Asn  
 530 535 540

Glu Ile Leu Leu Ser Glu Ser Leu Val Glu Asn Cys His Gln Asn Ala  
 545 550 555 560  
 Glu His Phe Phe Thr Ala Lys Asn Glu Thr Tyr His Phe Lys Asn Tyr  
 565 570 575  
 Leu His Val Glu Thr Leu Pro Leu Thr Asn Ile Ser Thr Leu Asp Thr  
 580 585 590  
 Phe Leu Ala Leu Asn Leu Thr Phe Ile Glu Asn Ile Asp Phe Lys Ala  
 595 600 605  
 Val Glu Leu Tyr Ser Ser Gly Glu Arg Lys Leu Ala Asn Val Phe Asp  
 610 615 620  
 Leu Glu Thr Met Phe Arg Glu Tyr Asn Tyr Tyr Ala Gln Ser Ile Ser  
 625 630 635 640  
 Gly Leu Arg Lys Asp Phe Asp Asn Ser Gln Arg Asn Asn Arg Asp Arg  
 645 650 655  
 Ile Ile Gln Asp Phe Ser Glu Ile Leu Ala Asp Leu Gly Ser Ile Gly  
 660 665 670  
 Lys Val Ile Val Asn Ile Ala Ser Ser Ala Phe Ser Leu Phe Gly Gly  
 675 680 685  
 Ile Val Thr Gly Ile Leu Asn Phe Ile Lys Asn Pro Leu Gly Gly Met  
 690 695 700  
 Leu Thr Phe Leu Leu Val Gly Ala Ile Ile Ile Leu Val Ile Leu Leu  
 705 710 715 720  
 Val Arg Arg Thr Asn Asn Met Ser Gln Ala Pro Ile Arg Met Ile Tyr  
 725 730 735  
 Pro Asp Ile Glu Lys Ser Arg Ser Ser Val Thr Pro Thr Glu Pro Glu  
 740 745 750  
 Val Ile Lys Gln Ile Leu Leu Gly Met His Asn Met Gln Gln Glu Glu  
 755 760 765  
 Tyr Lys Lys Arg Glu Glu His Lys Ala Ser Gln Pro Ser Phe Leu Lys  
 770 775 780  
 Arg Ala Thr Asp Ala Phe Leu  
 785 790  
 <210> 42  
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 <212> PRT  
 <213> Herpesvirus saimiri  
 <400> 42  
 Met Val Pro Asn Lys His Leu Leu Leu Ile Ile Leu Ser Phe Ser Thr  
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Ala	Cys	Gly	Gln	Thr	Thr	Pro	Thr	Thr	Ala	Val	Glu	Lys	Asn	Lys	Thr	20	25	30	
Gln	Ala	Ile	Tyr	Gln	Glu	Tyr	Phe	Lys	Tyr	Arg	Val	Cys	Ser	Ala	Ser	35	40	45	
Thr	Thr	Gly	Glu	Leu	Phe	Arg	Phe	Asp	Leu	Asp	Arg	Thr	Cys	Pro	Ser	50	55	60	
Thr	Glu	Asp	Lys	Val	His	Lys	Glu	Gly	Ile	Leu	Leu	Val	Tyr	Lys	Lys	65	70	75	80
Asn	Ile	Val	Pro	Tyr	Ile	Phe	Lys	Val	Arg	Arg	Tyr	Lys	Lys	Ile	Thr	85	90	95	
Thr	Ser	Val	Arg	Ile	Phe	Asn	Gly	Trp	Thr	Arg	Glu	Gly	Val	Ala	Ile	100	105	110	
Thr	Asn	Lys	Trp	Glu	Leu	Ser	Arg	Ala	Val	Pro	Lys	Tyr	Glu	Ile	Asp	115	120	125	
Ile	Met	Asp	Lys	Thr	Tyr	Gln	Cys	His	Asn	Cys	Met	Gln	Ile	Glu	Val	130	135	140	
Asn	Gly	Met	Leu	Asn	Ser	Tyr	Tyr	Asp	Arg	Asp	Gly	Asn	Asn	Lys	Thr	145	150	155	160
Val	Asp	Leu	Lys	Pro	Val	Asp	Gly	Leu	Thr	Gly	Ala	Ile	Thr	Arg	Tyr	165	170	175	
Ile	Ser	Gln	Pro	Lys	Val	Phe	Ala	Asp	Pro	Gly	Trp	Leu	Trp	Gly	Thr	180	185	190	
Tyr	Arg	Thr	Arg	Thr	Thr	Val	Asn	Cys	Glu	Ile	Val	Asp	Met	Phe	Ala	195	200	205	
Arg	Ser	Ala	Asp	Pro	Tyr	Thr	Tyr	Phe	Val	Thr	Ala	Leu	Gly	Asp	Thr	210	215	220	
Val	Glu	Val	Ser	Pro	Phe	Cys	Asp	Val	Asp	Asn	Ser	Cys	Pro	Asn	Ala	225	230	235	240
Thr	Asp	Val	Leu	Ser	Val	Gln	Ile	Asp	Leu	Asn	His	Thr	Val	Val	Asp	245	250	255	
Tyr	Gly	Asn	Arg	Ala	Thr	Ser	Gln	Gln	His	Lys	Lys	Arg	Ile	Phe	Ala	260	265	270	
His	Thr	Leu	Asp	Tyr	Ser	Val	Ser	Trp	Glu	Ala	Val	Asn	Lys	Ser	Ala	275	280	285	
Ser	Val	Cys	Ser	Met	Val	Phe	Trp	Lys	Ser	Phe	Gln	Arg	Ala	Ile	Gln	290	295	300	
Thr	Glu	His	Asp	Leu	Thr	Tyr	His	Phe	Ile	Ala	Asn	Glu	Ile	Thr	Ala	305	310	315	320

Gly	Phe	Ser	Thr	Val	Lys	Glu	Pro	Leu	Ala	Asn	Phe	Thr	Ser	Asp	Tyr	325	330	335	
Asn	Cys	Leu	Met	Thr	His	Ile	Asn	Thr	Thr	Leu	Glu	Asp	Lys	Ile	Ala	340	345	350	
Arg	Val	Asn	Asn	Thr	His	Thr	Pro	Asn	Gly	Thr	Ala	Glu	Tyr	Tyr	Gln	355	360	365	
Thr	Glu	Gly	Gly	Met	Ile	Leu	Val	Trp	Gln	Pro	Leu	Ile	Ala	Ile	Glu	370	375	380	
Leu	Glu	Glu	Ala	Met	Leu	Glu	Ala	Thr	Thr	Ser	Pro	Val	Thr	Pro	Ser	385	390	395	400
Ala	Pro	Thr	Ser	Ser	Ser	Arg	Ser	Lys	Arg	Ala	Ile	Arg	Ser	Ile	Arg	405	410	415	
Asp	Val	Ser	Ala	Gly	Ser	Glu	Asn	Asn	Val	Phe	Leu	Ser	Gln	Ile	Gln	420	425	430	
Tyr	Ala	Tyr	Asp	Lys	Leu	Arg	Gln	Ser	Ile	Asn	Asn	Val	Leu	Glu	Glu	435	440	445	
Leu	Ala	Ile	Thr	Trp	Cys	Arg	Glu	Gln	Val	Arg	Gln	Thr	Met	Val	Trp	450	455	460	
Tyr	Glu	Ile	Ala	Lys	Ile	Asn	Pro	Thr	Ser	Val	Met	Thr	Ala	Ile	Tyr	465	470	475	480
Gly	Lys	Pro	Val	Ser	Arg	Lys	Ala	Leu	Gly	Asp	Val	Ile	Ser	Val	Thr	485	490	495	
Glu	Cys	Ile	Asn	Val	Asp	Gln	Ser	Ser	Val	Ser	Ile	His	Lys	Ser	Leu	500	505	510	
Lys	Thr	Glu	Asn	Asn	Asp	Ile	Cys	Tyr	Ser	Arg	Pro	Pro	Val	Thr	Phe	515	520	525	
Lys	Phe	Val	Asn	Ser	Ser	Gln	Leu	Phe	Lys	Gly	Gln	Leu	Gly	Ala	Arg	530	535	540	
Asn	Glu	Ile	Leu	Leu	Ser	Glu	Ser	Leu	Val	Glu	Asn	Cys	His	Gln	Asn	545	550	555	560
Ala	Glu	Thr	Phe	Phe	Thr	Ala	Lys	Asn	Glu	Thr	Tyr	His	Phe	Lys	Asn	565	570	575	
Tyr	Val	His	Val	Glu	Thr	Leu	Pro	Val	Asn	Asn	Ile	Ser	Thr	Leu	Asp	580	585	590	
Thr	Phe	Leu	Ala	Leu	Asn	Leu	Thr	Phe	Ile	Glu	Asn	Ile	Asp	Phe	Lys	595	600	605	
Ala	Val	Glu	Leu	Tyr	Ser	Ser	Gly	Glu	Arg	Lys	Leu	Ala	Asn	Val	Phe	610	615	620	

Asp Leu Glu Thr Met Phe Arg Glu Tyr Asn Tyr Tyr Ala Gln Ser Ile  
 625 630 635 640  
 Ser Gly Leu Arg Lys Asp Phe Asp Asn Ser Gln Arg Asn Asn Arg Asp  
 645 650 655  
 Arg Ile Ile Gln Asp Phe Ser Glu Ile Leu Ala Asp Leu Gly Ser Ile  
 660 665 670  
 Gly Lys Val Ile Val Asn Val Ala Ser Gly Ala Phe Ser Leu Phe Gly  
 675 680 685  
 Gly Ile Val Thr Gly Ile Leu Asn Phe Ile Lys Asn Pro Leu Gly Gly  
 690 695 700  
 Met Phe Thr Phe Leu Leu Ile Gly Ala Val Ile Ile Leu Val Ile Leu  
 705 710 715 720  
 Leu Val Arg Arg Thr Asn Asn Met Ser Gln Ala Pro Ile Arg Met Ile  
 725 730 735  
 Tyr Pro Asp Val Glu Lys Ser Lys Ser Thr Val Thr Pro Met Glu Pro  
 740 745 750  
 Glu Thr Ile Lys Gln Ile Leu Leu Gly Met His Asn Met Gln Gln Glu  
 755 760 765  
 Ala Tyr Lys Lys Lys Glu Glu Gln Arg Ala Ala Arg Pro Ser Ile Phe  
 770 775 780  
 Arg Gln Ala Ala Glu Thr Phe Leu  
 785 790  
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 <213> Equine herpesvirus 2  
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 Thr Thr Pro Phe Ala Thr His Arg Pro Glu Val Val Ala Glu Glu Asn  
 35 40 45  
 Pro Ala Asn Pro Phe Leu Pro Phe Arg Val Cys Gly Ala Ser Pro Thr  
 50 55 60  
 Gly Gly Glu Ile Phe Arg Phe Pro Leu Glu Glu Ser Cys Pro Asn Thr  
 65 70 75 80  
 Glu Asp Lys Asp His Ile Glu Gly Ile Ala Leu Ile Tyr Lys Thr Asn  
 85 90 95

Ile	Val	Pro	Tyr	Val	Phe	Asn	Val	Arg	Lys	Tyr	Arg	Lys	Ile	Met	Thr			
			100					105					110					
Ser	Thr	Thr	Ile	Tyr	Lys	Gly	Trp	Ser	Glu	Asp	Ala	Ile	Thr	Asn	Gln			
		115					120					125						
His	Thr	Arg	Ser	Tyr	Ala	Val	Pro	Leu	Tyr	Glu	Val	Gln	Met	Met	Asp			
	130					135					140							
His	Tyr	Tyr	Gln	Cys	Phe	Ser	Ala	Val	Gln	Val	Asn	Glu	Gly	Gly	His			
145					150				155						160			
Val	Asn	Thr	Tyr	Tyr	Asp	Arg	Asp	Gly	Trp	Asn	Glu	Thr	Ala	Phe	Leu			
				165				170						175				
Lys	Pro	Ala	Asp	Gly	Leu	Thr	Ser	Ser	Ile	Thr	Arg	Tyr	Gln	Ser	Gln			
			180					185					190					
Pro	Glu	Val	Tyr	Ala	Thr	Pro	Arg	Asn	Leu	Leu	Trp	Ser	Tyr	Thr	Thr			
	195					200						205						
Arg	Thr	Thr	Val	Asn	Cys	Glu	Val	Thr	Glu	Met	Ser	Ala	Arg	Ser	Met			
	210					215					220							
Lys	Pro	Phe	Glu	Phe	Phe	Val	Thr	Ser	Val	Gly	Asp	Thr	Ile	Glu	Met			
225					230					235					240			
Ser	Pro	Phe	Leu	Lys	Glu	Asn	Gly	Thr	Glu	Pro	Glu	Lys	Ile	Leu	Lys			
				245					250					255				
Arg	Pro	His	Ser	Ile	Gln	Leu	Leu	Lys	Asn	Tyr	Ala	Val	Thr	Lys	Tyr			
			260					265					270					
Gly	Val	Gly	Leu	Gly	Gln	Ala	Asp	Asn	Ala	Thr	Arg	Phe	Phe	Ala	Ile			
	275					280						285						
Phe	Gly	Asp	Tyr	Ser	Leu	Ser	Trp	Lys	Ala	Thr	Thr	Glu	Asn	Ser	Ser			
	290					295					300							
Tyr	Cys	Asp	Leu	Ile	Leu	Trp	Lys	Gly	Phe	Ser	Asn	Ala	Ile	Gln	Thr			
305					310					315					320			
Gln	His	Asn	Ser	Ser	Leu	His	Phe	Ile	Ala	Asn	Asp	Ile	Thr	Ala	Ser			
				325					330					335				
Phe	Ser	Thr	Pro	Leu	Glu	Glu	Glu	Ala	Asn	Phe	Asn	Glu	Thr	Phe	Lys			
			340					345					350					
Cys	Ile	Trp	Asn	Asn	Thr	Gln	Glu	Glu	Ile	Gln	Lys	Lys	Leu	Lys	Glu			
	355					360						365						
Val	Glu	Lys	Thr	His	Arg	Pro	Asn	Gly	Thr	Ala	Lys	Val	Tyr	Lys	Thr			
	370					375					380							
Thr	Gly	Asn	Leu	Tyr	Ile	Val	Trp	Gln	Pro	Leu	Ile	Gln	Ile	Asp	Leu			
385					390					395					400			

Leu Asp Thr His Ala Lys Leu Tyr Asn Leu Thr Asn Ala Thr Ala Ser  
 405 410 415  
 Pro Thr Ser Thr Pro Thr Thr Ser Pro Arg Arg Arg Arg Arg Asp Thr  
 420 425 430  
 Ser Ser Val Ser Gly Gly Gly Asn Asn Gly Asp Asn Ser Thr Lys Glu  
 435 440 445  
 Glu Ser Val Ala Ala Ser Gln Val Gln Phe Ala Tyr Asp Asn Leu Arg  
 450 455 460  
 Lys Ser Ile Asn Arg Val Leu Gly Glu Leu Ser Arg Ala Trp Cys Arg  
 465 470 475 480  
 Glu Gln Tyr Arg Ala Ser Leu Met Trp Tyr Glu Leu Ser Lys Ile Asn  
 485 490 495  
 Pro Thr Ser Val Met Ser Ala Ile Tyr Gly Arg Pro Val Ser Ala Lys  
 500 505 510  
 Leu Ile Gly Asp Val Val Ser Val Ser Asp Cys Ile Ser Val Asp Gln  
 515 520 525  
 Lys Ser Val Phe Val His Lys Asn Met Lys Val Pro Gly Lys Glu Asp  
 530 535 540  
 Leu Cys Tyr Thr Arg Pro Val Val Gly Phe Lys Phe Ile Asn Gly Ser  
 545 550 555 560  
 Glu Leu Phe Ala Gly Gln Leu Gly Pro Arg Asn Glu Ile Val Leu Ser  
 565 570 575  
 Thr Ser Gln Val Glu Val Cys Gln His Ser Cys Glu His Tyr Phe Gln  
 580 585 590  
 Ala Gly Asn Gln Met Tyr Lys Tyr Lys Asp Tyr Tyr Tyr Val Ser Thr  
 595 600 605  
 Leu Asn Leu Thr Asp Ile Pro Thr Leu His Thr Met Ile Thr Leu Asn  
 610 615 620  
 Leu Ser Leu Val Glu Asn Ile Asp Phe Lys Val Ile Glu Leu Tyr Ser  
 625 630 635 640  
 Lys Thr Glu Lys Arg Leu Ser Asn Val Phe Asp Ile Glu Thr Met Phe  
 645 650 655  
 Arg Glu Tyr Asn Tyr Tyr Thr Gln Asn Leu Asn Gly Leu Arg Lys Asp  
 660 665 670  
 Leu Asp Asp Ser Ile Asp His Gly Arg Asp Ser Phe Ile Gln Thr Leu  
 675 680 685  
 Gly Asp Ile Met Gln Asp Leu Gly Thr Ile Gly Lys Val Val Val Asn  
 690 695 700



Val Ala Ser Gly Val Phe Ser Leu Phe Gly Ser Ile Val Ser Gly Val  
 705 710 715 720  
 Ile Ser Phe Phe Lys Asn Pro Phe Gly Gly Met Leu Leu Ile Val Leu  
 725 730 735  
 Ile Ile Ala Gly Val Val Val Val Tyr Leu Phe Met Thr Arg Ser Arg  
 740 745 750  
 Ser Ile Tyr Ser Ala Pro Ile Arg Met Leu Tyr Pro Gly Val Glu Arg  
 755 760 765  
 Ala Ala Gln Glu Pro Gly Ala His Pro Val Ser Glu Asp Gln Ile Arg  
 770 775 780  
 Asn Ile Leu Met Gly Met His Gln Phe Gln Gln Arg Gln Arg Ala Glu  
 785 790 795 800  
 Glu Glu Ala Arg Arg Glu Glu Glu Val Lys Gly Lys Arg Thr Leu Phe  
 805 810 815  
 Glu Val Ile Arg Asp Ser Ala Thr  
 820  
 <210> 44  
 <211> 818  
 <212> PRT  
 <213> Equine herpesvirus 5  
 <400> 44  
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 Leu Ala Leu Leu Cys Gly Arg Val Ala Leu Asp Glu Ser Ser Ala Thr  
 20 25 30  
 Pro Ser Ile Pro Pro Thr His Lys Pro Ala Val His His Glu Asp Asn  
 35 40 45  
 Thr Thr Asn Pro Phe Leu Leu Phe Arg Val Cys Gly Ala Ser Pro Thr  
 50 55 60  
 Gly Glu Ile Phe Arg Phe Pro Leu Glu Glu Asn Cys Pro Asn Thr Glu  
 65 70 75 80  
 Asp Lys Glu His Val Glu Gly Ile Leu Leu Ile Tyr Lys Thr Asn Ile  
 85 90 95  
 Val Pro Tyr Ile Phe Asn Val Arg Lys Tyr Arg Lys Leu Val Thr Ser  
 100 105 110  
 Thr Thr Ile Tyr Lys Gly Trp Ser Gln Asp Ala Ile Thr Asn Gln Tyr  
 115 120 125  
 Thr Ser Ser Phe Ala Met Pro Leu Trp Glu Ala Arg Leu Val Asp Tyr  
 130 135 140

Asn	Tyr	Glu	Cys	Tyr	Asn	Gly	Ile	Gln	Val	Thr	Glu	Asn	Gly	His	Leu	145	150	155	160
Thr	Thr	Tyr	Val	Asp	Arg	Asp	Gly	Tyr	Asn	Glu	Ser	Val	Arg	Leu	Val	165	170		175
Pro	Ala	Asp	Gly	Leu	Thr	Ser	Ser	Ile	Arg	Arg	Tyr	His	Ser	Gln	Pro	180	185		190
Glu	Leu	Tyr	Val	Thr	Pro	Arg	Asn	Leu	Leu	Trp	Ser	Tyr	Thr	Thr	Arg	195	200		205
Thr	Thr	Val	Asn	Cys	Glu	Val	Ile	Asp	Met	Thr	Ala	Arg	Ser	His	Lys	210	215		220
Pro	Phe	Glu	Tyr	Phe	Val	Thr	Ala	Ser	Gly	Asp	Ser	Ile	Glu	Thr	Ser	225	230	235	240
Pro	Phe	Tyr	Thr	Asn	Ala	Ser	Arg	Arg	Val	Pro	Val	Gln	Val	Leu	Tyr	245	250		255
Asn	Tyr	Ser	Val	Thr	Asp	Tyr	Gly	Val	Gly	Leu	Gly	Ser	Gly	Glu	Asn	260	265		270
Val	Thr	Arg	Phe	Phe	Ala	Thr	Leu	Asn	Asp	Phe	Ser	Ile	Ser	Trp	Lys	275	280		285
Ala	Ala	Thr	Glu	Asn	Ser	Ser	Tyr	Cys	Pro	Leu	Val	Leu	Trp	Lys	Gly	290	295		300
Phe	Pro	Ser	Ala	Ile	Gln	Thr	Lys	His	Glu	Lys	Ser	Tyr	His	Phe	Ile	305	310	315	320
Ala	Asp	Ala	Val	Thr	Ala	Ser	Phe	Thr	Thr	Pro	Leu	Thr	Asp	Glu	Thr	325	330		335
Ser	Tyr	Phe	Asn	Thr	Thr	Tyr	Gln	Cys	Ala	Trp	Gln	Asp	Ile	Glu	Gly	340	345		350
Glu	Ile	Gln	Lys	Arg	Phe	Asp	Pro	Val	Ser	Lys	Thr	His	Ala	Arg	Asn	355	360		365
Gly	Ser	Val	Gln	Ile	Tyr	Lys	Thr	Ser	Gly	Asn	Leu	Tyr	Val	Val	Trp	370	375		380
Gln	Pro	Leu	Val	Gln	Leu	Asp	Leu	Leu	Ala	Ala	His	Ala	Lys	Thr	Ile	385	390	395	400
Asn	Ser	Thr	Asp	Asn	Ser	Thr	Ser	Pro	Thr	Thr	Ala	Pro	Asn	Thr	Thr	405	410		415
Thr	Ser	Thr	Ser	Ser	Arg	Arg	Lys	Arg	Arg	Asp	Thr	Gly	Asn	Thr	Ala	420	425		430
Thr	Asn	Asn	Ser	Ser	Ser	Asn	Asn	Ser	Ser	Met	Glu	Glu	Asn	Leu	Ala	435	440		445

Thr	Ser	Gln	Val	Gln	Phe	Ala	Tyr	Asp	Gln	Leu	Arg	Lys	Ser	Ile	Asn		
450						455					460						
Arg	Val	Leu	Glu	Gln	Leu	Ser	Arg	Val	Trp	Cys	Gln	Asn	Gln	Tyr	Arg		
465					470					475					480		
Ala	Ser	Leu	Met	Trp	Tyr	Glu	Leu	Ser	Lys	Ile	Asn	Pro	Thr	Ser	Val		
				485					490					495			
Met	Ser	Ala	Ile	Tyr	Gly	Arg	Pro	Val	Ser	Ala	Lys	Leu	Val	Gly	Asp		
			500					505					510				
Val	Val	Gln	Ile	Ser	Asp	Cys	Ile	Thr	Val	Asp	Gln	Glu	Ser	Val	Phe		
		515						520				525					
Val	His	Arg	Asn	Leu	Arg	Val	Pro	Gly	Ser	Lys	Asp	Leu	Cys	Tyr	Thr		
	530					535					540						
Arg	Pro	Val	Val	Gly	Phe	Lys	Phe	Ile	Asn	Gly	Ser	Glu	Leu	Phe	Val		
545					550					555					560		
Gly	Gln	Leu	Gly	Ala	Arg	Asn	Glu	Ile	Leu	Leu	Ser	Thr	Asn	Leu	Val		
				565					570					575			
Glu	Val	Cys	Gln	His	Ser	Cys	Glu	His	Tyr	Phe	Gln	Gly	Gly	Asn	His		
			580					585					590				
Ile	Tyr	Lys	Tyr	Lys	Asn	Tyr	Glu	Tyr	Val	Ser	Thr	Met	Asn	Leu	Thr		
		595					600					605					
Asp	Val	Pro	Thr	Leu	His	Thr	Met	Ile	Thr	Leu	Asn	Leu	Ser	Leu	Val		
	610					615					620						
Glu	Asn	Val	Asp	Phe	Gln	Val	Ile	Gln	Leu	Tyr	Ser	Gln	Lys	Glu	Lys		
625					630					635					640		
Lys	Leu	Ser	Asn	Val	Phe	Asp	Ile	Glu	Thr	Met	Phe	Arg	Glu	Tyr	Asn		
				645					650					655			
Tyr	Tyr	Thr	Gln	Asn	Leu	Lys	Gly	Leu	Arg	Lys	Asp	Leu	Asp	Asp	Ser		
			660					665					670				
Ile	His	Asp	Gly	Arg	Asp	Ser	Phe	Ile	Gln	Phe	Leu	Gly	Asp	Leu	Val		
		675					680					685					
Gln	Asp	Leu	Val	Pro	Val	Gly	Asp	Val	Ile	Val	Asn	Val	Ala	Ser	Gly		
	690					695					700						
Val	Phe	Ser	Leu	Phe	Gly	Ser	Ile	Val	Ser	Gly	Val	Ile	Ser	Phe	Leu		
705					710					715					720		
Lys	Asn	Pro	Leu	Gly	Ala	Ile	Leu	Thr	Ile	Ala	Leu	Ile	Val	Gly	Gly		
				725					730					735			
Ile	Ile	Val	Leu	Tyr	Leu	Phe	Ile	Thr	Arg	Ser	Arg	Thr	Val	Tyr	Gln		
			740					745					750				

Ala Pro Ile Arg Met Leu Tyr Pro Glu Val Asp Arg Ala Pro Gln Gln  
 755 760 765

Asn Val Gln Pro Ile Pro Glu Asp Gln Val Arg Ser Ile Leu Leu Ala  
 770 775 780

Met His Gln Phe Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln Gln  
 785 790 795 800

Glu Glu His Thr Gln Arg Arg Ser Ile Phe Asp Thr Ile Arg Glu Ser  
 805 810 815

Thr Ser

<210> 45

<211> 830

<212> PRT

<213> Alcelaphine herpesvirus

<400> 45

Met Ala His Thr Gly Ser Thr Val Cys Ala Phe Leu Ile Phe Ala Val  
 1 5 10 15

Leu Lys Asn Val Phe Cys Gln Thr Pro Thr Ser Ser Ser Glu Val Glu  
 20 25 30

Asp Val Ile Pro Glu Ala Asn Thr Val Ser Asp Asn Ile Ile Arg Gln  
 35 40 45

Gln Arg Asn Asn Thr Ala Lys Gly Ile His Ser Asp Pro Ser Ala Phe  
 50 55 60

Pro Phe Arg Val Cys Ser Ala Ser Asn Ile Gly Asp Ile Phe Arg Phe  
 65 70 75 80

Gln Thr Ser His Ser Cys Pro Asn Thr Lys Asp Lys Glu His Asn Glu  
 85 90 95

Gly Ile Leu Leu Ile Phe Lys Glu Asn Ile Val Pro Tyr Val Phe Lys  
 100 105 110

Val Arg Lys Tyr Arg Lys Ile Val Thr Thr Ser Thr Ile Tyr Asn Gly  
 115 120 125

Ile Tyr Ala Asp Ala Val Thr Asn Gln His Val Phe Ser Lys Ser Val  
 130 135 140

Pro Ile Tyr Glu Thr Arg Arg Met Asp Thr Ile Tyr Gln Cys Tyr Asn  
 145 150 155 160

Ser Leu Asp Val Thr Val Gly Gly Asn Leu Leu Val Tyr Thr Asp Asn  
 165 170 175

Asp Gly Ser Asn Met Thr Val Asp Leu Gln Pro Val Asp Gly Leu Ser  
 180 185 190

Asn	Ser	Val	Arg	Arg	Tyr	His	Ser	Gln	Pro	Glu	Ile	His	Ala	Glu	Pro	
		195					200					205				
Gly	Trp	Leu	Leu	Gly	Gly	Tyr	Arg	Arg	Arg	Thr	Thr	Val	Asn	Cys	Glu	
		210				215				220						
Val	Thr	Glu	Thr	Asp	Ala	Arg	Ala	Val	Pro	Pro	Phe	Arg	Tyr	Phe	Ile	
225				230						235				240		
Thr	Asn	Ile	Gly	Asp	Thr	Ile	Glu	Met	Ser	Pro	Phe	Trp	Ser	Lys	Ala	
				245				250						255		
Trp	Asn	Glu	Thr	Glu	Phe	Ser	Gly	Glu	Pro	Asp	Arg	Thr	Leu	Thr	Val	
		260						265				270				
Ala	Lys	Asp	Tyr	Arg	Val	Val	Asp	Tyr	Lys	Phe	Arg	Gly	Thr	Gln	Pro	
		275				280						285				
Gln	Gly	His	Thr	Arg	Ile	Phe	Val	Asp	Lys	Glu	Glu	Tyr	Thr	Leu	Ser	
		290				295				300						
Trp	Ala	Gln	Gln	Phe	Arg	Asn	Ile	Ser	Tyr	Cys	Arg	Trp	Ala	His	Trp	
305				310						315				320		
Lys	Ser	Phe	Asp	Asn	Ala	Ile	Lys	Thr	Glu	His	Gly	Lys	Ser	Leu	His	
				325				330						335		
Phe	Val	Ala	Asn	Asp	Ile	Thr	Ala	Ser	Phe	Tyr	Thr	Pro	Asn	Thr	Gln	
		340				345						350				
Thr	Arg	Glu	Val	Leu	Gly	Lys	His	Val	Cys	Leu	Asn	Asn	Thr	Ile	Glu	
		355				360				365						
Ser	Glu	Leu	Lys	Ser	Arg	Leu	Ala	Lys	Val	Asn	Asp	Thr	His	Ser	Pro	
370						375				380						
Asn	Gly	Thr	Ala	Gln	Tyr	Tyr	Leu	Thr	Asn	Gly	Gly	Leu	Leu	Leu	Val	
385				390						395				400		
Trp	Gln	Pro	Leu	Val	Gln	Gln	Lys	Leu	Leu	Asp	Ala	Lys	Gly	Leu	Leu	
				405				410				415				
Asp	Ala	Val	Lys	Lys	Gln	Gln	Asn	Thr	Thr	Thr	Thr	Thr	Thr	Thr	Thr	
		420				425						430				
Arg	Ser	Arg	Arg	Gln	Arg	Arg	Ser	Val	Ser	Ser	Gly	Ile	Asp	Asp	Val	
		435				440						445				
Tyr	Thr	Ala	Glu	Ser	Thr	Ile	Leu	Leu	Thr	Gln	Ile	Gln	Phe	Ala	Tyr	
450						455				460						
Asp	Thr	Leu	Arg	Ala	Gln	Ile	Asn	Asn	Val	Leu	Glu	Glu	Leu	Ser	Arg	
465				470						475				480		
Ala	Trp	Cys	Arg	Glu	Gln	His	Arg	Ala	Ser	Leu	Met	Trp	Asn	Glu	Leu	
				485				490				495				

Ser Lys Ile Asn Pro Thr Ser Val Met Ser Ser Ile Tyr Gly Arg Pro  
 500 505 510  
 Val Ser Ala Lys Arg Ile Gly Asp Val Ile Ser Val Ser His Cys Val  
 515 520 525  
 Val Val Asp Gln Asp Ser Val Ser Leu His Arg Ser Met Arg Val Pro  
 530 535 540  
 Gly Arg Asp Lys Thr His Glu Cys Tyr Ser Arg Pro Pro Val Thr Phe  
 545 550 555 560  
 Lys Phe Ile Asn Asp Ser His Leu Tyr Lys Gly Gln Leu Gly Val Asn  
 565 570 575  
 Asn Glu Ile Leu Leu Thr Thr Thr Ala Val Glu Ile Cys His Glu Asn  
 580 585 590  
 Thr Glu His Tyr Phe Gln Gly Gly Asn Asn Met Tyr Phe Tyr Lys Asn  
 595 600 605  
 Tyr Arg His Val Lys Thr Met Pro Val Gly Asp Val Ala Thr Leu Asp  
 610 615 620  
 Thr Phe Met Val Leu Asn Leu Thr Leu Val Glu Asn Ile Asp Phe Gln  
 625 630 635 640  
 Val Ile Glu Leu Tyr Ser Arg Glu Glu Lys Arg Met Ser Thr Ala Phe  
 645 650 655  
 Asp Ile Glu Thr Met Phe Arg Glu Tyr Asn Tyr Tyr Thr Gln Arg Val  
 660 665 670  
 Thr Gly Leu Arg Arg Asp Leu Thr Asp Leu Ala Thr Asn Arg Asn Gln  
 675 680 685  
 Phe Val Asp Ala Phe Gly Ser Leu Met Asp Asp Leu Gly Val Val Gly  
 690 695 700  
 Lys Thr Val Leu Asn Ala Val Ser Ser Val Ala Thr Leu Phe Ser Ser  
 705 710 715 720  
 Ile Val Ser Gly Ile Ile Asn Phe Ile Lys Asn Pro Phe Gly Gly Met  
 725 730 735  
 Leu Leu Phe Gly Leu Ile Ala Ala Val Val Ile Thr Val Ile Leu Leu  
 740 745 750  
 Asn Arg Lys Ala Lys Arg Phe Ala Gln Asn Pro Val Gln Met Ile Tyr  
 755 760 765  
 Pro Asp Ile Lys Thr Ile Thr Ser Gln Arg Glu Glu Leu Gln Val Asp  
 770 775 780  
 Pro Ile Ser Lys His Glu Leu Asp Arg Ile Met Leu Ala Met His Asp  
 785 790 795 800

Tyr His Ala Ser Lys Gln Pro Glu Ser Lys Gln Asp Glu Glu Gln Gly  
805 810 815

Ser Thr Thr Ser Gly Pro Ala Asp Trp Leu Asn Lys Ala Lys  
820 825 830

<210> 46

<211> 829

<212> PRT

<213> Epstein-Barr virus

<400> 46

Met Thr Arg Arg Arg Val Leu Ser Val Val Val Leu Leu Ala Ala Leu  
1 5 10 15

Ala Cys Arg Leu Gly Ala Gln Thr Pro Glu Gln Pro Ala Pro Pro Ala  
20 25 30

Thr Thr Val Gln Pro Thr Ala Thr Arg Gln Gln Thr Ser Phe Pro Phe  
35 40 45

Arg Val Cys Glu Leu Ser Ser His Gly Asp Leu Phe Arg Phe Ser Ser  
50 55 60

Asp Ile Gln Cys Pro Ser Phe Gly Thr Arg Glu Asn His Thr Glu Gly  
65 70 75 80

Leu Leu Met Val Phe Lys Asp Asn Ile Ile Pro Tyr Ser Phe Lys Val  
85 90 95

Arg Ser Tyr Thr Lys Ile Val Thr Asn Ile Leu Ile Tyr Asn Gly Trp  
100 105 110

Tyr Ala Asp Ser Val Thr Asn Arg His Glu Glu Lys Phe Ser Val Asp  
115 120 125

Ser Tyr Glu Thr Asp Gln Met Asp Thr Ile Tyr Gln Cys Tyr Asn Ala  
130 135 140

Val Lys Met Thr Lys Asp Gly Leu Thr Arg Val Tyr Val Asp Arg Asp  
145 150 155 160

Gly Val Asn Ile Thr Val Asn Leu Lys Pro Thr Gly Gly Leu Ala Asn  
165 170 175

Gly Val Arg Arg Tyr Ala Ser Gln Thr Glu Leu Tyr Asp Ala Pro Gly  
180 185 190

Trp Leu Ile Trp Thr Tyr Arg Thr Arg Thr Thr Val Asn Cys Leu Ile  
195 200 205

Thr Asp Met Met Ala Lys Ser Asn Ser Pro Phe Asp Phe Phe Val Thr  
210 215 220

Thr Thr Gly Gln Thr Val Glu Met Ser Pro Phe Tyr Asp Gly Lys Asn  
225 230 235 240

Lys Glu Thr Phe His Glu Arg Ala Asp Ser Phe His Val Arg Thr Asn  
 245 250 255  
 Tyr Lys Ile Val Asp Tyr Asp Asn Arg Gly Thr Asn Pro Gln Gly Glu  
 260 265 270  
 Arg Arg Ala Phe Leu Asp Lys Gly Thr Tyr Thr Leu Ser Trp Lys Leu  
 275 280 285  
 Glu Asn Arg Thr Ala Tyr Cys Pro Leu Gln His Trp Gln Thr Phe Asp  
 290 295 300  
 Ser Thr Ile Ala Thr Glu Thr Gly Lys Ser Ile His Phe Val Thr Asp  
 305 310 315 320  
 Glu Gly Thr Ser Ser Phe Val Thr Asn Thr Thr Val Gly Ile Glu Leu  
 325 330 335  
 Pro Asp Ala Phe Lys Cys Ile Glu Glu Gln Val Asn Lys Thr Met His  
 340 345 350  
 Glu Lys Tyr Glu Ala Val Gln Asp Arg Tyr Thr Lys Gly Gln Glu Ala  
 355 360 365  
 Ile Thr Tyr Phe Ile Thr Ser Gly Gly Leu Leu Leu Ala Trp Leu Pro  
 370 375 380  
 Leu Thr Pro Arg Ser Leu Ala Thr Val Lys Asn Leu Thr Glu Leu Thr  
 385 390 395 400  
 Thr Pro Thr Ser Ser Pro Pro Ser Ser Pro Ser Pro Pro Ala Pro Ser  
 405 410 415  
 Ala Ala Arg Gly Ser Thr Pro Ala Ala Val Leu Arg Arg Arg Arg Arg  
 420 425 430  
 Asp Ala Gly Asn Ala Thr Thr Pro Val Pro Pro Thr Ala Pro Gly Lys  
 435 440 445  
 Ser Leu Gly Thr Leu Asn Asn Pro Ala Thr Val Gln Ile Gln Phe Ala  
 450 455 460  
 Tyr Asp Ser Leu Arg Arg Gln Ile Asn Arg Met Leu Gly Asp Leu Ala  
 465 470 475 480  
 Arg Ala Trp Cys Leu Glu Gln Lys Arg Gln Asn Met Val Leu Arg Glu  
 485 490 495  
 Leu Thr Lys Ile Asn Pro Thr Thr Val Met Ser Ser Ile Tyr Gly Lys  
 500 505 510  
 Ala Val Ala Ala Lys Arg Leu Gly Asp Val Ile Ser Val Ser Gln Cys  
 515 520 525  
 Val Pro Val Asn Gln Ala Thr Val Thr Leu Arg Lys Ser Met Arg Val  
 530 535 540



Pro Gly Ser Glu Thr Met Cys Tyr Ser Arg Pro Leu Val Ser Phe Ser  
 545 550 555 560  
 Phe Ile Asn Asp Thr Lys Thr Tyr Glu Gly Gln Leu Gly Thr Asp Asn  
 565 570 575  
 Glu Ile Phe Leu Thr Lys Lys Met Thr Glu Val Cys Gln Ala Thr Ser  
 580 585 590  
 Gln Tyr Tyr Phe Gln Ser Gly Asn Glu Ile His Val Tyr Asn Asp Tyr  
 595 600 605  
 His His Phe Lys Thr Ile Glu Leu Asp Gly Ile Ala Thr Leu Gln Thr  
 610 615 620  
 Phe Ile Ser Leu Asn Thr Ser Leu Ile Glu Asn Ile Asp Phe Ala Ser  
 625 630 635 640  
 Leu Glu Leu Tyr Ser Arg Asp Glu Gln Arg Ala Ser Asn Val Phe Asp  
 645 650 655  
 Leu Glu Gly Ile Phe Arg Glu Tyr Asn Phe Gln Ala Gln Asn Ile Ala  
 660 665 670  
 Gly Leu Arg Lys Asp Leu Asp Asn Ala Val Ser Asn Gly Arg Asn Gln  
 675 680 685  
 Phe Val Asp Gly Leu Gly Glu Leu Met Asp Ser Leu Gly Ser Val Gly  
 690 695 700  
 Gln Ser Ile Thr Asn Leu Val Ser Thr Val Gly Gly Leu Phe Ser Ser  
 705 710 715 720  
 Leu Val Ser Gly Phe Ile Ser Phe Phe Lys Asn Pro Phe Gly Gly Met  
 725 730 735  
 Leu Ile Leu Val Leu Val Ala Gly Val Val Ile Leu Val Ile Ser Leu  
 740 745 750  
 Thr Arg Arg Thr Arg Gln Met Ser Gln Gln Pro Val Gln Met Leu Tyr  
 755 760 765  
 Pro Gly Ile Asp Glu Leu Ala Gln Gln His Ala Ser Gly Glu Gly Pro  
 770 775 780  
 Gly Ile Asn Pro Ile Ser Lys Thr Glu Leu Gln Ala Ile Met Leu Ala  
 785 790 795 800  
 Leu His Glu Gln Asn Gln Glu Gln Lys Arg Ala Ala Gln Arg Ala Ala  
 805 810 815  
 Gly Pro Ser Val Ala Ser Arg Ala Leu Gln Ala Ala Arg  
 820 825

<210> 47  
 <211> 660  
 <212> DNA

<213> artificial

<220>

<223> Suid herpesvirus 1 - bases 641-1300

<400> 47

cgccgcccgtc	cggtccacg	gtggtgcggc	tggagcccga	gcaggcctgc	cccagagtact	60
cgcaggggcg	caacttcacg	gaggggatcg	ccgtgctctt	caaggagaac	atcgccccgc	120
acaagttcaa	ggcccatc	tactacaaga	acgtcatcgt	cacgaccgtg	tggtccggga	180
gcacgtacgc	ggccatcacg	aaccgcttca	cagaccgcgt	gcccgtcccc	gtgcaggaga	240
tcacggacgt	gatcgaccgc	cgcggcaagt	gcgtctccaa	ggccgagtac	gtgcgcaaca	300
accacaaggt	gaccgccttc	gaccgcgacg	agaacccccgt	cgaggtggac	ctgcgcccct	360
cgcgcctgaa	cgcgctcggc	acccgcggct	ggcacaccac	caacgacacc	tacaccaaga	420
tcggcgccgc	gggctttctac	cacacgggca	cctccgtcaa	ctgcatcgtc	gaggaggtgg	480
aggcgcgctc	cgtgtacccc	tacgactcct	tcgccctgtc	cacgggggac	attgtgtaca	540
tgtccccctt	ctacggcctg	cgcgaggggg	cccacgggga	gcacatcggc	tacgcgcccg	600
ggcgcttcca	gcaggtggag	cactactacc	ccatcgacct	ggactcgcgc	ctccgcgcct	660

<210> 48

<211> 359

<212> PRT

<213> artificial

<220>

<223> Suid herpesvirus 1 - bases 491-850

<400> 48

Ala	Ala	Pro	Ala	Ala	Ala	Arg	Arg	Ala	Arg	Arg	Ser	Pro	Gly	Pro	Ala	
1				5					10					15		
Gly	Thr	Pro	Glu	Pro	Pro	Ala	Val	Asn	Gly	Thr	Gly	His	Leu	Arg	Ile	
			20					25					30			
Thr	Thr	Gly	Ser	Ala	Glu	Phe	Ala	Arg	Leu	Gln	Phe	Thr	Tyr	Asp	His	
		35					40					45				
Ile	Gln	Ala	His	Val	Asn	Asp	Met	Leu	Gly	Arg	Ile	Ala	Ala	Ala	Trp	
	50					55					60					
Cys	Glu	Leu	Gln	Asn	Lys	Asp	Arg	Thr	Leu	Trp	Ser	Glu	Met	Ser	Arg	
65					70					75					80	
Leu	Asn	Pro	Ser	Ala	Val	Ala	Thr	Ala	Ala	Leu	Gly	Gln	Arg	Val	Ser	
				85					90					95		
Ala	Arg	Met	Leu	Gly	Asp	Val	Met	Ala	Ile	Ser	Arg	Cys	Val	Glu	Val	
		100						105					110			
Arg	Gly	Gly	Val	Tyr	Val	Gln	Asn	Ser	Met	Arg	Val	Pro	Gly	Glu	Arg	
		115					120					125				
Gly	Thr	Cys	Tyr	Ser	Arg	Pro	Leu	Val	Thr	Phe	Glu	His	Asn	Gly	Thr	
	130					135					140					
Gly	Val	Ile	Glu	Gly	Gln	Leu	Gly	Asp	Asp	Asn	Glu	Leu	Leu	Ile	Ser	
145					150					155					160	

Arg Asp Leu Ile Glu Pro Cys Thr Gly Asn His Arg Arg Tyr Phe Lys  
 165 170 175  
 Leu Gly Ser Gly Tyr Val Tyr Tyr Glu Asp Tyr Asn Tyr Val Arg Met  
 180 185 190  
 Val Glu Val Pro Glu Thr Ile Ser Thr Arg Val Thr Leu Asn Leu Thr  
 195 200 205  
 Leu Leu Glu Asp Arg Glu Phe Leu Pro Leu Glu Val Tyr Thr Arg Glu  
 210 215 220  
 Glu Leu Ala Asp Thr Gly Leu Leu Asp Tyr Ser Glu Ile Gln Arg Arg  
 225 230 235 240  
 Asn Gln Leu His Ala Leu Lys Phe Tyr Asp Ile Asp Arg Val Val Lys  
 245 250 255  
 Val Asp His Asn Val Val Leu Leu Arg Gly Ile Ala Asn Phe Phe Gln  
 260 265 270  
 Gly Leu Gly Asp Val Gly Ala Ala Val Gly Lys Val Val Leu Gly Ala  
 275 280 285  
 Thr Gly Ala Val Ile Ser Ala Val Gly Gly Met Val Ser Phe Leu Ser  
 290 295 300  
 Asn Pro Phe Gly Ala Leu Ala Ile Gly Leu Leu Val Leu Ala Gly Leu  
 305 310 315 320  
 Val Ala Ala Phe Leu Ala Tyr Arg His Ile Ser Arg Leu Arg Arg Asn  
 325 330 335  
 Pro Met Lys Ala Leu Tyr Pro Val Thr Thr Lys Thr Leu Lys Glu Asp  
 340 345 350  
 Gly Val Asp Glu Gly Asp Val  
 355

<210> 49  
 <211> 420  
 <212> DNA  
 <213> Suid herpesvirus 2

<400> 49  
 ccagcataat gatagccaat aatctgtgtt actctaccct gatcttaaat gacgaggacg 60  
 tgacggggat cgacgagaaa gatattctga cgggtgcatgt aaacaagaat accgtgtaca 120  
 gggttcgttag gacgagcgtc agggagtcta tactcggcac gctgctgtct agatggctca 180  
 ggaagagaaa ggaagtgaag gcgcgcatga aacgctgtga ggaccctatg ttggcactga 240  
 tacttgacaa gcagcagctt gccctcaagg tgacgtgcaa tgcgttttac ggcttcacgg 300  
 gagcgtgca cggctctgctg ccgtgtctcc ctctagcggc gtccatcacc agcatagggc 360  
 gggacatgct taggcagacg agtgacttta tcaacaatgt cctttcgtct agagaatacg 420

<210> 50  
 <211> 159

<212> PRT

<213> Suid herpesvirus 2

<400> 50

Ser Ile Met Ile Ala Asn Asn Leu Cys Tyr Ser Thr Leu Ile Leu Asn  
1 5 10 15

Asp Glu Asp Val Thr Gly Ile Asp Glu Lys Asp Ile Leu Thr Val His  
20 25 30

Val Asn Lys Asn Thr Val Tyr Arg Phe Val Arg Ser Ser Val Arg Glu  
35 40 45

Ser Ile Leu Gly Thr Leu Leu Ser Arg Trp Leu Arg Lys Arg Lys Glu  
50 55 60

Val Lys Ala Arg Met Lys Arg Cys Glu Asp Pro Met Leu Ala Leu Ile  
65 70 75 80

Leu Asp Lys Gln Gln Leu Ala Leu Lys Val Thr Cys Asn Ala Phe Tyr  
85 90 95

Gly Phe Thr Gly Ala Val His Gly Leu Leu Pro Cys Leu Pro Leu Ala  
100 105 110

Ala Ser Ile Thr Ser Ile Gly Arg Asp Met Leu Arg Gln Thr Ser Asp  
115 120 125

Phe Ile Asn Asn Val Leu Ser Ser Arg Glu Tyr Val Ser Glu Lys Phe  
130 135 140

Ser Leu Ser Asp Gly Asp Phe Gln Gly Asp Phe Ser Pro Glu Cys  
145 150 155

<210> 51

<211> 466

<212> DNA

<213> artificial

<220>

<223> Portion of porcine gamma herpesvirus polymerase - AF118399

<400> 51

taatctatgt	cactctaccc	taatccatca	tgaagacctg	cataaatatc	ctcaattaaa	60
ggaggaggat	tatgaaacat	ttttgattag	ttctggtcct	gttcactttg	taaaaaaaca	120
catatcagaa	tctcttctgt	ctaacctgct	tacaacatgg	ctggctaaga	gaaaaatgat	180
cagaaaggaa	ttagcagcat	gtgctgacct	aaagctcagg	acaatttttag	ataaacagca	240
gcttgcaatt	aaggtgacat	gcaatgctgt	gtatgggttc	actggtgttg	catctggtat	300
gctgcctgt	ctcaagattg	cagagacct	aactatgcaa	ggaagggccca	tgttggaata	360
gacaaaagta	ttttagtaga	atttaagtca	tgaggatctc	cattccatct	gtaagggttg	420
ctttatgcct	cagtcaccaa	acagcattga	taaacccttc	aagggtg		466

<210> 52

<211> 423

<212> DNA

<213> artificial

<220>

<223> Portion of porcine gamma herpesvirus polymerase - AF118401

<400> 52

gaggacctgc	ataagtatcc	tcaattaaag	gaggatgatt	atgaaacatt	tttgattagt	60
tctggccctg	ttcactttgt	aaaaaaacac	atatcagaat	ctcttctgtc	gaacttgctc	120
acaacatggc	tgccaagag	aaaaatgatc	agaaaggaat	tgacagcatg	tgctgatcca	180
aagctcagga	caattttaga	taaacagcag	cttgcaatta	aggtgacatg	caatgctgtg	240
tatggattca	ctggtgttgc	atctggtatg	ctgccatgtc	tcaagattgc	agagaccatc	300
actatgcaag	gaagggccat	gttggaagaa	acaaaagtat	ttgtagagaa	tctgagtcac	360
gaagatctcc	gttccatgat	taagggtggc	tctataacct	agtcacataa	cgtgtttgat	420
aaa						423

<210> 53

<211> 292

<212> DNA

<213> artificial

<220>

<223> Portion of Acelaphine herpesvirus.

<400> 53

aagtaataga	actatactct	agagaagaga	agaggatgag	cactgcattt	gatatagaga	60
ccatgttttag	agaatacaac	tactacacac	agaggggtcac	tgccctgcgg	agggacttga	120
cagacctagc	tacaaacaga	aatcaatttg	tagatgcctt	tgccagcctc	atggacgact	180
tgggggtcgt	ggggaaaacg	gtgttgtaatg	ctgtgagcag	tgtggccaca	ctcttcagct	240
ctatagtctc	agggatcatc	aatttcatta	aaaaccctt	tgggggaatg	tt	292

<210> 54

<211> 152

<212> DNA

<213> artificial

<220>

<223> Portion of Acelaphine herpesvirus.

<400> 54

tggtgccgtg	agcagcaccg	agcctctctc	atgtggaacg	agctaagcaa	aatcaaccct	60
accagtgtga	tgagctctat	atacggggcg	ccagtatctg	ccaaaagaat	tgagatgtg	120
atatctgtct	ctcactgtgt	ggtggtggac	ca			152

<210> 55

<211> 793

<212> PRT

<213> artificial

<220>

<223> Portion of Acelaphine herpesvirus.

<400> 55

Lys	Gly	Ile	His	Ser	Asp	Pro	Ser	Ala	Phe	Pro	Phe	Arg	Val	Cys	Ser
1				5					10					15	

Ala	Ser	Asn	Ile	Gly	Asp	Ile	Phe	Arg	Phe	Gln	Thr	Ser	His	Ser	Cys	20	25	30	
Pro	Asn	Thr	Lys	Asp	Lys	Glu	His	Asn	Glu	Gly	Ile	Leu	Leu	Ile	Phe	35	40	45	
Lys	Glu	Asn	Ile	Val	Pro	Tyr	Val	Phe	Lys	Val	Arg	Lys	Tyr	Arg	Lys	50	55	60	
Ile	Val	Thr	Thr	Ser	Thr	Ile	Tyr	Asn	Gly	Ile	Tyr	Ala	Asp	Ala	Val	65	70	75	80
Thr	Asn	Gln	His	Val	Phe	Ser	Lys	Ser	Val	Pro	Ile	Tyr	Glu	Thr	Arg	85	90	95	
Arg	Met	Asp	Thr	Ile	Tyr	Gln	Cys	Tyr	Asn	Ser	Leu	Asp	Val	Thr	Val	100	105	110	
Gly	Gly	Asn	Leu	Leu	Val	Tyr	Thr	Asp	Asn	Asp	Gly	Ser	Asn	Met	Thr	115	120	125	
Val	Asp	Leu	Gln	Pro	Val	Asp	Gly	Leu	Ser	Asn	Ser	Val	Arg	Arg	Tyr	130	135	140	
His	Ser	Gln	Pro	Glu	Ile	His	Ala	Glu	Pro	Gly	Trp	Leu	Leu	Gly	Gly	145	150	155	160
Tyr	Arg	Arg	Arg	Thr	Thr	Val	Asn	Cys	Glu	Val	Thr	Glu	Thr	Asp	Ala	165	170	175	
Arg	Ala	Val	Pro	Pro	Phe	Arg	Tyr	Phe	Ile	Thr	Asn	Ile	Gly	Asp	Thr	180	185	190	
Ile	Glu	Met	Ser	Pro	Phe	Trp	Ser	Lys	Ala	Trp	Asn	Glu	Thr	Glu	Phe	195	200	205	
Ser	Gly	Glu	Pro	Asp	Arg	Thr	Leu	Thr	Val	Ala	Lys	Asp	Tyr	Arg	Val	210	215	220	
Val	Asp	Tyr	Lys	Phe	Arg	Gly	Thr	Gln	Pro	Gln	Gly	His	Thr	Arg	Ile	225	230	235	240
Phe	Val	Asp	Lys	Glu	Glu	Tyr	Thr	Leu	Ser	Trp	Ala	Gln	Gln	Phe	Arg	245	250	255	
Asn	Ile	Ser	Tyr	Cys	Arg	Trp	Ala	His	Trp	Lys	Ser	Phe	Asp	Asn	Ala	260	265	270	
Ile	Lys	Thr	Glu	His	Gly	Lys	Ser	Leu	His	Phe	Val	Ala	Asn	Asp	Ile	275	280	285	
Thr	Ala	Ser	Phe	Tyr	Thr	Pro	Asn	Thr	Gln	Thr	Arg	Glu	Val	Leu	Gly	290	295	300	
Lys	His	Val	Cys	Leu	Asn	Asn	Thr	Ile	Glu	Ser	Glu	Leu	Lys	Ser	Arg	305	310	315	320

Leu Ala Lys Val Asn Asp Thr His Ser Pro Asn Gly Thr Ala Gln Tyr  
 325 330 335  
 Tyr Leu Thr Asn Gly Gly Leu Leu Leu Val Trp Gln Pro Leu Val Gln  
 340 345 350  
 Gln Lys Leu Leu Asp Ala Lys Gly Leu Leu Asp Ala Val Lys Lys Gln  
 355 360 365  
 Gln Asn Thr Thr Thr Thr Thr Thr Thr Thr Arg Ser Arg Arg Gln Arg  
 370 375 380  
 Arg Ser Val Ser Ser Gly Ile Asp Asp Val Tyr Thr Ala Glu Ser Thr  
 385 390 395 400  
 Ile Leu Leu Thr Gln Ile Gln Phe Ala Tyr Asp Thr Leu Arg Ala Gln  
 405 410 415  
 Ile Asn Asn Val Leu Glu Glu Leu Ser Arg Ala Trp Cys Arg Glu Gln  
 420 425 430  
 His Arg Ala Ser Leu Met Trp Asn Glu Leu Ser Lys Ile Asn Pro Thr  
 435 440 445  
 Ser Val Met Ser Ser Ile Tyr Gly Arg Pro Val Ser Ala Lys Arg Ile  
 450 455 460  
 Gly Asp Val Ile Ser Val Ser His Cys Val Val Val Asp Gln Asp Ser  
 465 470 475 480  
 Val Ser Leu His Arg Ser Met Arg Val Pro Gly Arg Asp Lys Thr His  
 485 490 495  
 Glu Cys Tyr Ser Arg Pro Pro Val Thr Phe Lys Phe Ile Asn Asp Ser  
 500 505 510  
 His Leu Tyr Lys Gly Gln Leu Gly Val Asn Asn Glu Ile Leu Leu Thr  
 515 520 525  
 Thr Thr Ala Val Glu Ile Cys His Glu Asn Thr Glu His Tyr Phe Gln  
 530 535 540  
 Gly Gly Asn Asn Met Tyr Phe Tyr Lys Asn Tyr Arg His Val Lys Thr  
 545 550 555 560  
 Met Pro Val Gly Asp Val Ala Thr Leu Asp Thr Phe Met Val Leu Asn  
 565 570 575  
 Leu Thr Leu Val Glu Asn Ile Asp Phe Gln Val Ile Glu Leu Tyr Ser  
 580 585 590  
 Arg Glu Glu Lys Arg Met Ser Thr Ala Phe Asp Ile Glu Thr Met Phe  
 595 600 605  
 Arg Glu Tyr Asn Tyr Tyr Thr Gln Arg Val Thr Gly Leu Arg Arg Asp  
 610 615 620

Leu Thr Asp Leu Ala Thr Asn Arg Asn Gln Phe Val Asp Ala Phe Gly  
 625                      630                      635                      640  
 Ser Leu Met Asp Asp Leu Gly Val Val Gly Lys Thr Val Leu Asn Ala  
                     645                      650                      655  
 Val Ser Ser Val Ala Thr Leu Phe Ser Ser Ile Val Ser Gly Ile Ile  
                     660                      665                      670  
 Asn Phe Ile Lys Asn Pro Phe Gly Gly Met Leu Leu Phe Gly Leu Ile  
                     675                      680                      685  
 Ala Ala Val Val Ile Thr Val Ile Leu Leu Asn Arg Lys Ala Lys Arg  
                     690                      695                      700  
 Phe Ala Gln Asn Pro Val Gln Met Ile Pro Asp Ile Lys Thr Ile Thr  
 705                      710                      715                      720  
 Ser Gln Arg Glu Glu Leu Gln Val Asp Pro Ile Ser Lys His Glu Leu  
                     725                      730                      735  
 Asp Arg Ile Met Leu Ala Met His Asp Tyr His Ala Ser Lys Gln Pro  
                     740                      745                      750  
 Glu Ser Lys Gln Asp Glu Glu Gln Gly Ser Thr Thr Ser Gly Pro Ala  
                     755                      760                      765  
 Asp Leu Asn Lys Ala Lys Asn Val Leu Arg Arg Arg Ala Gly Tyr Lys  
                     770                      775                      780  
 Pro Leu Lys Arg Thr Asp Ser Phe Glu  
 785                      790